

TABLE 2.—Precipitation departures, 1925

District	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Accumulated departure for the year
New England.....	-0.2	-1.1	+0.1	-1.1	-1.1	+0.3	+0.4	-2.0	-0.2	+0.8	-0.4	-0.6	-5.1
Middle Atlantic.....	+1.0	-1.7	-1.3	-0.6	-1.5	-1.1	+1.1	-2.2	-1.3	+0.6	-0.2	-0.9	-8.1
South Atlantic.....	+2.8	-1.9	-2.4	-1.2	-1.1	-1.7	-3.2	-3.0	-2.6	-0.7	-0.2	+0.2	-15.0
Florida peninsula.....	+1.4	-0.8	-0.9	+0.4	+5.8	-2.0	0.0	+1.9	-3.9	-3.4	+6.0	+0.6	+5.1
East Gulf.....	+3.6	-2.1	-3.4	-2.7	-0.5	-1.6	+0.9	-3.3	-2.0	+3.0	+1.3	-0.8	-7.6
West Gulf.....	-1.1	-1.7	-2.2	-1.8	-1.9	-1.1	-0.9	-1.6	+1.3	+3.8	+1.0	-1.3	-7.6
Ohio Valley and Tennessee.....	-1.4	-0.9	-1.9	-1.4	-1.6	-1.2	-0.1	-1.6	+0.4	+3.8	+0.9	-2.2	-7.2
Lower Lakes.....	-0.5	+0.2	+0.4	-0.5	-1.6	-0.7	+0.6	-1.2	+2.3	+0.7	+0.3	-0.9	-0.8
Upper Lakes.....	-1.2	-0.4	-1.0	-0.7	-2.2	-0.7	-0.1	-1.1	+0.5	-0.1	-0.7	-0.6	-8.3
North Dakota.....	-0.4	-0.1	-0.2	-0.3	-0.8	+1.6	-1.1	-1.4	+1.8	-0.4	-0.3	-0.2	-1.8
Upper Mississippi Valley.....	-1.3	-0.3	-1.1	-0.9	-2.3	+1.6	+0.1	-0.5	+1.8	+0.6	-0.2	-0.4	-3.4
Missouri Valley.....	-0.3	-0.3	-1.0	0.0	-2.3	+1.1	-1.6	-1.6	+1.0	+0.2	-0.1	-0.2	-5.1
Northern slope.....	-0.4	-0.3	-0.4	0.0	-0.6	+0.3	-0.2	+0.2	+0.7	+0.7	-0.3	0.0	-0.3
Middle slope.....	-0.3	-0.5	-0.8	0.0	-2.0	-0.7	+0.1	0.0	+1.3	0.0	+0.5	-0.3	-2.7
Southern slope.....	-0.4	-0.8	-0.8	+0.2	+1.2	-1.3	+0.7	-0.4	+1.3	+0.3	-0.5	-0.6	-1.1
Southern plateau.....	-0.6	-0.6	-0.2	-0.1	+0.1	-0.2	-0.3	-0.2	0.0	+0.6	-0.3	-0.1	-1.9
Middle plateau.....	-0.7	0.0	-0.1	+0.1	-0.2	+0.8	+0.8	+0.7	+0.5	+0.7	-0.1	-0.3	+2.2
Northern plateau.....	-0.2	-0.4	-0.8	-0.1	0.0	+0.1	+0.3	+0.3	+0.2	-0.5	-0.5	-0.4	-2.0
North Pacific coast region.....	-0.1	+0.5	-1.9	-0.1	-0.7	-0.9	-0.5	+0.4	-1.0	-2.9	-1.9	-0.4	-9.5
Middle Pacific coast region.....	-2.8	+2.1	-1.8	+0.8	+1.2	-0.1	0.0	+0.1	+0.4	-1.0	-1.1	-2.2	-4.4
South Pacific coast region.....	-1.8	-0.8	-0.3	+0.8	+0.7	+0.1	0.0	0.0	-0.2	+0.8	-0.7	0.0	-1.4
United States.....	-0.2	-0.6	-1.0	-0.4	-0.6	-0.4	-0.1	-0.8	+0.1	+0.4	+0.1	-0.6	-4.1

## TROPICAL CYCLONES DURING 1925

By W. P. DAY

Only three tropical disturbances which might be classed as hurricanes were observed in the Caribbean Sea, the Gulf of Mexico, and the adjacent waters of the Atlantic. At the same time four important storms were experienced on the Pacific south of Mexico, and several other individual reports of gales were received from vessels in that region and south of Central America.

On the 3d of June a tropical disturbance was experienced in the Pacific south of the Gulf of Tehuantepec. It moved slowly northwestward during the next three days, striking the Mexican coast west of Salina Cruz on the 7th. It was apparently only of moderate intensity.

At 2 a. m. on July 10, the S. S. *San Tiburcio* in the Pacific near latitude 15° N. and longitude 112° W. encountered a severe hurricane, the barometer reading as low as 28.90 inches.

The S. S. *Antinous* at 2.30 a. m. of August 20 in latitude 34° 38' N. and 63° 05' W. passed near the center of a small hurricane. The lowest reading of the barometer was 29.34 inches and the highest wind was force 12 (Beaufort). This storm began to form in the remnants of a low-pressure trough on the 18th, about half-way between Bermuda and the Florida Peninsula, moved thence slowly northeastward and apparently reached its greatest intensity while in the vicinity of the S. S. *Antinous*. It merged with a more extensive disturbance to the north, but could still be identified on the morning of the 21st near latitude 41° N. and longitude 52° W.

On the 5th of September the S. S. *Baja California* in the southwestern Gulf of Mexico experienced a storm with winds shifting from north through east to southeast. The storm moved rapidly northwest to the mouth of the Rio Grande by the evening of the 6th, and caused heavy rains and moderate gales over the lower Rio Grande valley. Again, from the 12th to the 16th of September a tropical disturbance of considerable intensity moved west-northwest along the southern Mexican coast, causing gales from the Gulf of Tehuantepec to Cape Corrientes.

During October the only important tropical disturbance was a hurricane apparently of considerable intensity, which developed off the southern Mexican coast about the 22d and passed inland near Cape Corrientes on the 25th.

The only important hurricane affecting the United States took form in the northwestern Caribbean Sea on November 29, crossed the Florida Peninsula and extreme eastern North Carolina, turned eastward across the Atlantic and was last noted on the 9th of December after passing the Azores. The lowest barometer reading reported in this storm was 28.90 inches, by the U.S.S. *Patoka*, near the North Carolina coast on the 2d of December. A complete account of this hurricane will be found under the heading, "Storms and Weather Warnings," in this issue of the REVIEW. The appearance of a true hurricane so late in the season is of particular interest.

## NOTES, ABSTRACTS, AND REVIEWS

## "THE CLIMATES OF THE UNITED STATES"

The publication by Ginn and Co. of Ward's "The Climates of the United States" was the outstanding climatological event in this country in 1925. Those who have had the privilege of receiving instruction from its author will recognize in the book the same qualities which make his teaching of climatology incomparable. Clarity of thought, directness and restraint of statement, inevitably march together through its pages. Con-

sequently it is about as invulnerable to criticism as a book could be. Yet there are certain phases of it which will or will not, according to the reader's temperament, engender the wish that they might have been different.

Ward paints his climatic pictures in broad strokes. The wisdom of this can not be doubted. But in such procedure lies the danger that generalization of statement may at rare intervals slip over the line and become weakness of statement, the danger that the student will be left with an impression that the book fails in

some slight degree to provide all that he might reasonably expect of it. Thus in speaking of mountain climates (p. 19), they are characterized as having "usually a greater frequency of rain and snow and, up to a certain altitude, more of it." To the reviewer, that is a disappointing sentence. It would have been so easy to say—and at no risk of cumbering the text with detail—, "up to altitudes, usually of some thousands of feet, which vary according to location, exposure and slope." To be sure, a concrete example is given on p. 181, but in the meantime much good might have been accomplished by intimating to the reader that this altitude is not fixed and by exciting his curiosity as to why it varies.

Again, one can not help seriously questioning the advisability of omitting climatological tables. To exclude them from the body of the text seems most wise, but not to present them at all seems, in view of the "smoothing" of nearly all the maps and graphs, unwise. This is generalization carried to the point of giving us a climatology without a climatological table. Though the splendid compilation of bibliographic material leaves no uncertainty as to where such tables may be found, nevertheless the reviewer feels that for the sake of those to whom such sources are not conveniently available, compact climatological tables should have been provided. For this is the one book which anyone interested either directly or indirectly in the climates of the United States will find indispensable—the source of information on this subject to own if one can have but one.

On a very few points the critical reader might be inclined to differ with the author's views in matters of interpretation. I think, for instance, that Ward's zeal in combating the fallacy which would ascribe to ocean currents powers over climate which they do not possess, results in failure to present some important aspects of the case. And is it quibbling to suggest that if "climate is most briefly defined as *average weather*" (p. 11), then the assertion (p. 21) that "an ocean current can have practically no influence on the climate of an adjacent land unless the wind is blowing on shore" is scarcely justifiable?

That Ward's book will find a wide and increasing field of usefulness is inevitable. Every teacher and student of climatology and geography will, of course, find in it a *sine qua non*; but so also will that great group of readers who, be they scientists or not, realize the value of extending their outlook beyond their more immediate concerns, in this case to an appreciation of the significance of climate in human affairs.—*Burton M. Varney*.

#### EXNER ON WORLD PRESSURE AND TEMPERATURE ANOMALIES; WAGNER ON A 16-YEAR PERIOD IN TEMPERATURE

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1836. *Monthly Pressure and Temperature Anomalies over the Earth. Correlation of Pressures of Iceland with other Places*. F. M. Exner. (Akad. Wiss. Wien, Ber. 133. 2a. No. 7–8. pp. 307–408, 1924.)—The present work forms an extension of earlier calculations [Abstract 605 (1914)] to cover a longer period, 1887–1916, and to cover the whole earth. Results have been obtained from 71 stations for pressure and 72 for temperature, mainly from year-books, but a quantity of hitherto unpublished information was used. Mostly results were available over the whole 30 years for each place, but in a few cases corrected results from neighboring stations were intro-

duced. In parts of the Southern Hemisphere and between the equator and 10° N. shorter series had to be employed. Over the whole series for pressure and temperature deviations from the mean were obtained for each month and for the year, the deviations being called anomalies. These results are set out by arranging the stations in belts of 10° of latitude. Charts give the geographical distribution of the pressure and temperature anomalies in February and August. In February pressure anomalies in the Northern Hemisphere are a maximum, but in the Southern Hemisphere a minimum, the reverse holding for August. Temperature anomalies for the Southern Hemisphere are greatest in August and least in February, the reverse holding for the Northern Hemisphere. The regions where pressure and temperature anomalies have their greatest values are called centers of action. The three most prominent of these regions are those where influxes of polar air are likely to occur, that is the northern part of the north Atlantic, northwest Asia, and the Behring Straits, the first of these being subdivided into the Icelandic and the Labrador regions. Finally, the pressure at Stykkisholm, Iceland, the place with the maximum pressure anomalies, is correlated with that at each of the other 70 stations for each month in the whole period and for the winter and summer half years, that is, October–March and April–September, these two latter being charted. A summary shows a large negative correlation in the region 30°–50° N. existing throughout the year, but generally in South latitudes the correlation is small. Further work is contemplated over the regions of zero correlation. An appendix gives the source of the information for each station and values of the pressure and temperature anomalies for each month and year of the series and also 30-year mean values for each month, the stations being arranged in alphabetical order.—*R. S. R.*

1841. *A Remarkable Sixteen-Yearly Climatic Period and Other Possible Periods*. A. Wagner. (Akad. Wiss. Wien, Ber. 133. 2a. No. 5–6. pp. 169–224, 1925.)—The author has first investigated the temperatures obtained at Vienna over the interval 1776–1919, and is able to confirm the existence of a period of 16 years for the temperature difference between the summer and the preceeding winter. The results are extended when examining a series of stations in middle and south Europe, but along a line Stykkisholm–Stockholm–Petrograd this period is lost. South of this line the phase is the same as that at Vienna, but north of the line it is reversed. The amplitude is a maximum in mid-Europe and decreases gradually north and south. Stations in mid-Europe and those in the north show the 16-yearly period in both summer and winter mean temperatures, but with opposite phases, and the winter amplitudes is about double the summer one. At the maximum of the period in middle and south Europe a severe winter and a warm summer occur, and these relations are reversed at the minimum. At mountain stations a larger amplitude is found than for a valley station in the same latitude. In an appendix, periods of 33.8, 3.5, and 3 years are investigated for the same series of observations. The Vienna periodograms confirm the existence of the 33.8 and 3 yearly periods for the same temperature difference as used above, but for other European stations it is less definite. In the region where the 16-yearly period is lost and its phase reversed, an 8-yearly period is very probable, but for other parts of Europe this period can not be detected with certainty.—*R. S. R.*